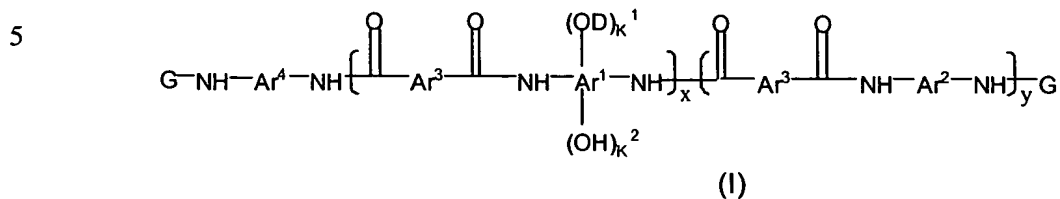
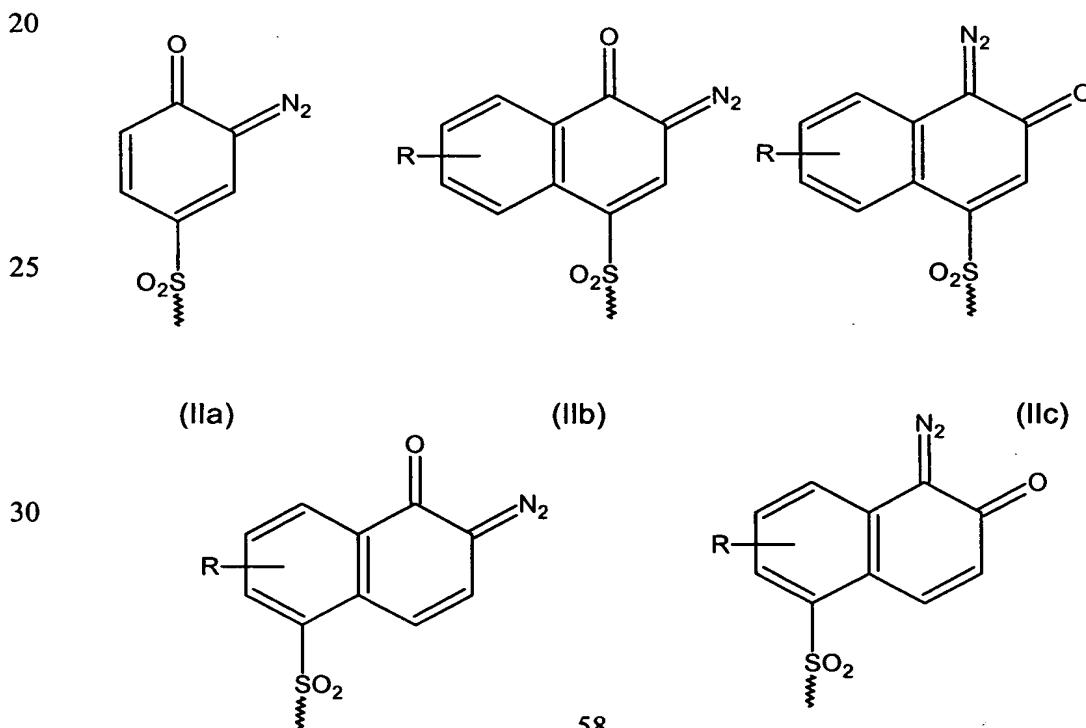


We Claim:

1. A polybenzoxazole precursor polymer with Structure I



10 wherein Ar^1 is selected from the group consisting of a tetravalent aromatic group, a tetravalent heterocyclic group and mixtures thereof; Ar^2 is selected from the group consisting of a divalent aromatic, a divalent heterocyclic, a divalent alicyclic and a divalent aliphatic group that may contain silicon; Ar^3 is selected from the group consisting of a divalent aromatic group, a divalent aliphatic group, a divalent heterocyclic group and mixtures thereof; Ar^4 is selected from the group consisting of Ar^1 (OH)₂ and Ar^2 , x is from about 10 to about 1000; y is from 0 to about 900; D is selected from the group consisting of one of the following moieties IIa-IIc:



(IId)

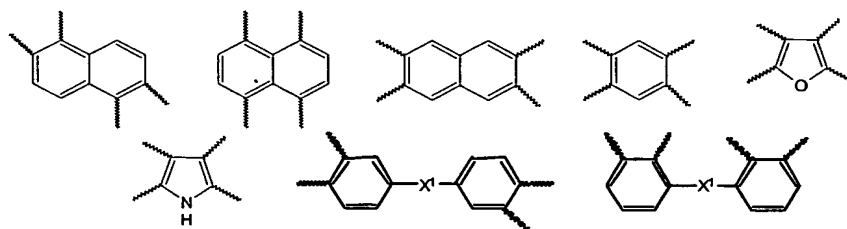
(IIe)

wherein, R is selected from the group consisting of H, a C₁ – C₄ alkyl group, a C₁ – C₄ alkoxy group and a cyclohexyl group, k¹ can be any positive value of up to about 0.5, k² can be any value from about 1.5 to about 2 with the proviso that (k¹+k²)=2, x is from about 10 to about 1000; y is from about 0 to about 900; G is an organic group having a carbonyl, carbonyloxy or sulfonyl group attached directly to the terminal NH of the polymer.

10

2. A polybenzoxazole precursor polymer according to claim 1, wherein Ar¹ is a moiety selected from the group consisting of

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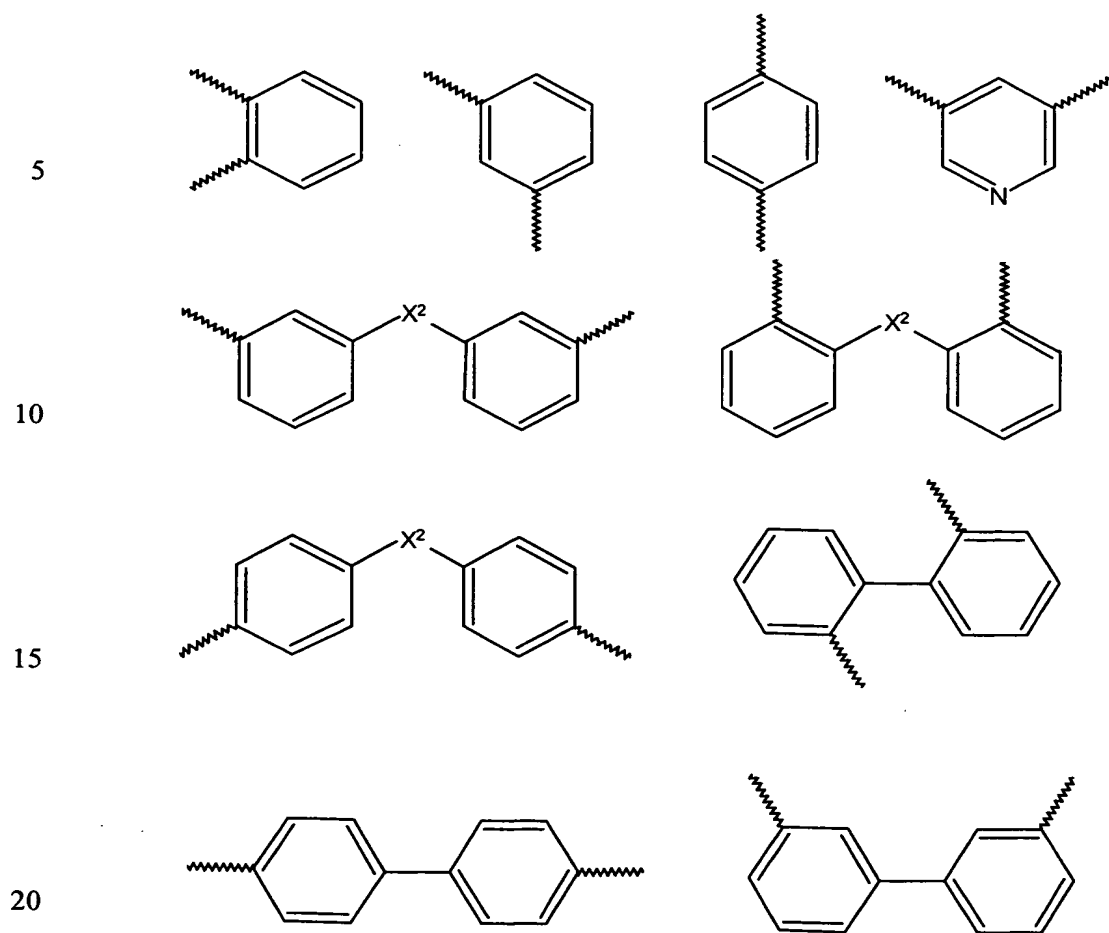


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wherein X¹ is selected from the group consisting of -O-, -S-, -C(CF₃)₂-, -CH₂-, -SO₂-, -NHCO- and -SiR⁹₂- and each R⁹ is independently selected from the group consisting of a C₁ – C₇ linear or branched alkyl and a C₅ – C₈ cycloalkyl group.

3. A polybenzoxazole precursor polymer according to claim 1, wherein Ar¹ is a moiety derived from a reactant selected from the group consisting of 2,2-bis(3-amino-4-hydroxyphenyl)-hexafluoropropane, 3,3'-dihydroxy-4,4'-diaminodiphenylether, 3,3'-dihydroxybenzidine, 4,6-diaminoresorcinol, and 2,2-bis(3-amino-4-hydroxyphenyl)propane and mixtures thereof.

30 4. A polybenzoxazole precursor polymer according to claim 1, wherein Ar³ is a moiety selected from the group consisting of



wherein X^2 is selected from the group consisting of $-O-$, $-S-$, $-C(CF_3)_2-$, $-CH_2-$, $-SO_2-$, and $-NHCO-$.

25

5. A polybenzoxazole precursor polymer according to claim 1, wherein Ar^3 is a moiety derived from a reactant selected from the group consisting of 4,4'-diphenyletherdicarboxylic acid, terephthalic acid, isophthalic acid, isophthaloyl dichloride, phthaloyl dichloride, terephthaloyl dichloride, 4,4'-
30 diphenyletherdicarboxylic acid dichloride, dimethylisophthalate,

dimethylphthalate, dimethylterphthalate, diethylisophthalate, diethylphthalate, diethylterphthalate and mixtures thereof.

6. A polybenzoxazole precursor polymer according to claim 1, wherein D
5 is selected from the group consisting of the moiety IIb and the moiety IId.

7. A polybenzoxazole precursor polymer according to claim 1, wherein k^1 is from about 0.01 to about 0.1.

10 8. A polybenzoxazole precursor polymer according to claim 1, wherein G is an organic group having a carbonyl group attached directly to the terminal NH of the polybenzoxazole precursor polymer.

9. A polybenzoxazole precursor polymer according to claim 1, wherein G
15 is alkylcarbonyl.

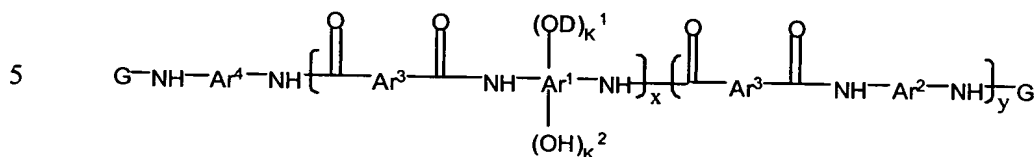
10. A polybenzoxazole precursor polymer according to claim 1, wherein Ar^1 is a moiety derived from a reactant selected from the group consisting of 2,2-bis(3-amino-4-hydroxyphenyl)-hexafluoropropane, 3,3'-dihydroxy-
20 4,4'-diaminodiphenylether, 3,3'-dihydroxybenzidine, 4,6-diaminoresorcinol, and 2,2-bis(3-amino-4-hydroxyphenyl)propane or mixtures thereof, and D is selected from the group consisting of the moiety IIb and the moiety IId.

25 11. A polybenzoxazole precursor polymer according to claim 1, wherein Ar^1 is a moiety derived from a reactant selected from the group consisting of 2,2-bis(3-amino-4-hydroxyphenyl)-hexafluoropropane, 3,3'-dihydroxy-4,4'-diaminodiphenylether, 3,3'-dihydroxybenzidine, 4,6-diaminoresorcinol, and G is alkylcarbonyl.

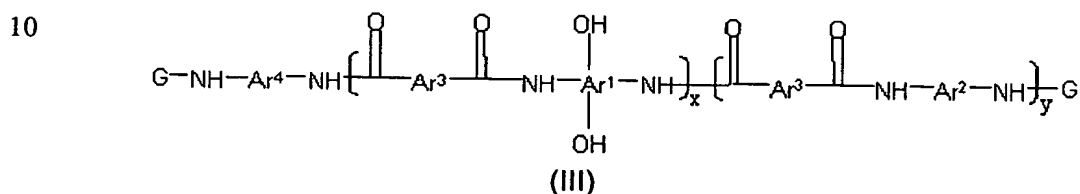
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12. A positive photosensitive resin composition comprising:

(a) at least one polybenzoxazole precursor polymer selected from the group consisting of polymers having Structure I and III;

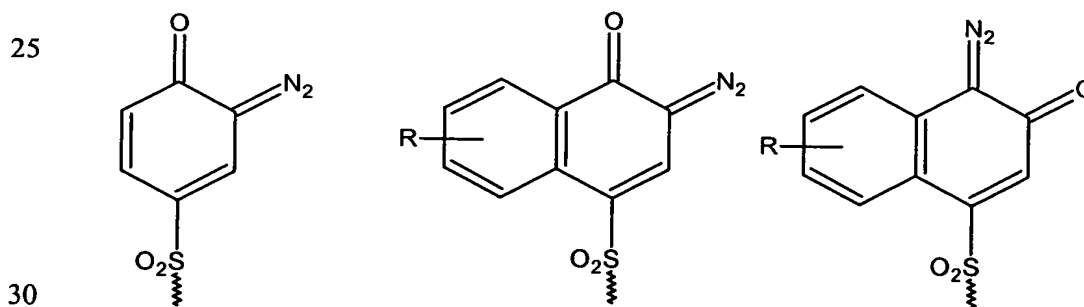


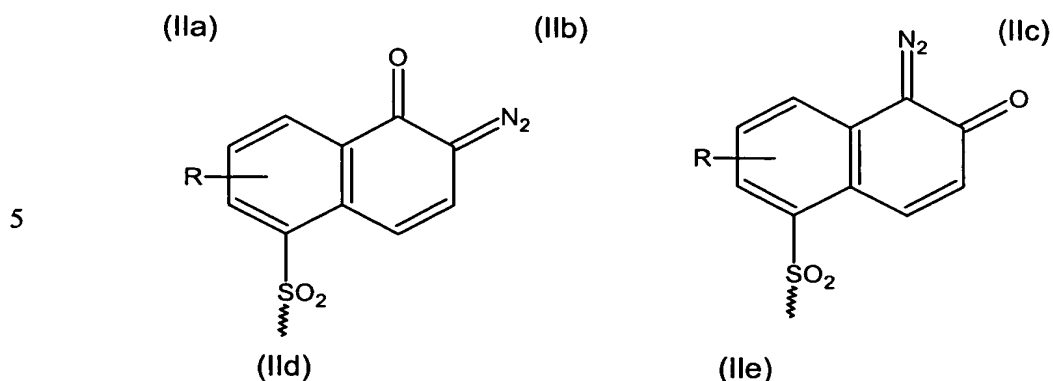
(I)



15 wherein Ar^1 is selected from the group consisting of a tetravalent aromatic group, a tetravalent heterocyclic group and mixtures thereof; Ar^2 is selected from the group consisting of a divalent aromatic, a divalent heterocyclic, a divalent alicyclic and a divalent aliphatic group that may contain silicon and mixtures thereof; Ar^3 is selected from the group consisting of a divalent aromatic group, a divalent aliphatic group, a divalent heterocyclic group and mixtures thereof; Ar^4 is selected from the group consisting of $\text{Ar}^1 (\text{OH})_2$ and Ar^2 ; D is selected from the group consisting of one of the following moieties IIa-IIe:

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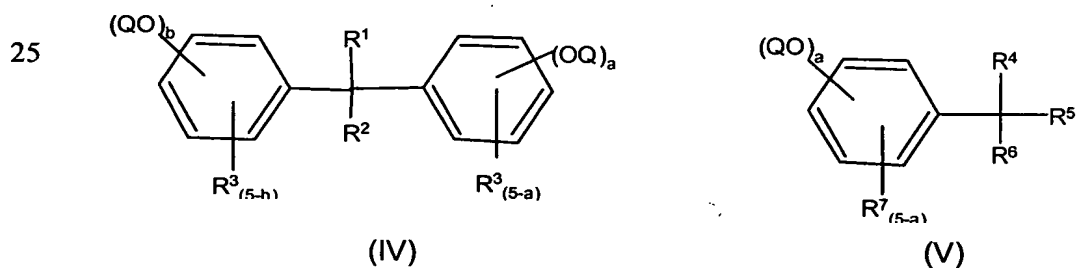


10 wherein, R is selected from the group consisting of H, a C₁ – C₄ alkyl group, a C₁ – C₄ alkoxy group and a cyclohexyl group; k¹ can be any positive value of up to about 0.5, k² can be any value from about 1.5 to 2 with the proviso that (k¹+k²)=2, x is from about 10 to about 1000; y is from about 0 to about 900; and G is an organic group having a carbonyl, carbonyloxy or sulfonyl group attached directly to the terminal NH of the polymer,

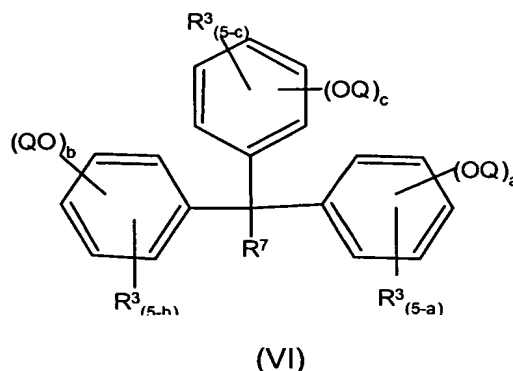
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(b) at least one non-polymeric photosensitive compound comprising a compound having within its structure one or more of moieties selected from the group consisting of IIa-IIe, with the proviso that if a polymer of Structure III is the sole polybenzoxazole precursor polymer, the non-polymeric photosensitive compound is selected from the group consisting of compounds described by structures IV – VI,

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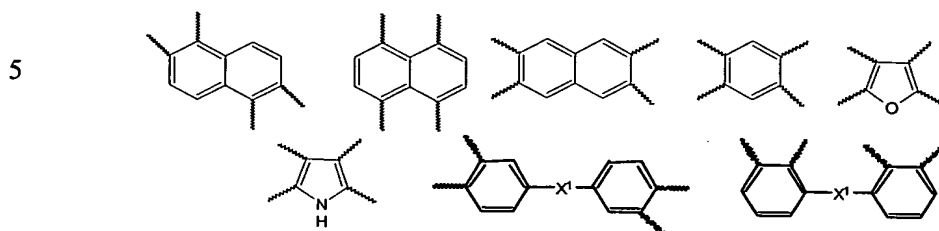


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- 10 wherein R^1 , R^2 , R^4 , R^5 , R^6 and R^7 each independently are selected from the group consisting of a linear or branched C_1 - C_4 alkyl group, a phenyl or halide substituted C_1 - C_4 linear or branched alkyl group, a perfluorinated C_1 - C_4 linear or branched alkyl group, a C_5 - C_7 cycloalkyl group, a C_1 - C_4 alkyl or halide substituted C_5 - C_7 cycloalkyl group, or
- 15 alternatively R^1 and R^2 or any two of R^4 , R^5 , and R^6 may together form a 5-7 membered ring; each R^3 is independently selected from the group consisting of H, a linear or branched C_1 - C_4 alkyl group, a phenyl or halide substituted C_1 - C_4 linear or branched alkyl group, a perfluorinated linear or branched C_1 - C_4 alkyl group, a C_5 - C_7 cycloalkyl group, a C_1 -
- 20 C_4 alkyl or halide substituted C_5 - C_7 cycloalkyl group, an unsubstituted phenyl group, and a phenyl or alkyl or halide substituted phenyl group; Q is selected from the group consisting of H or D with the proviso that at least one Q = D; D is selected from the group consisting of one of the moieties IIa-IIe; a is an integer from 1 to 5; b and c are integers from 0 to
- 25 5 with the provisos: (1) that for Structure IV, if $a = b = 1$ and both OQ are substituted para to the R^1R^2C substituent, then both R^1 and R^2 are not simultaneously methyl, and (2) $1 \leq a+b < 6$; and the proviso that for Structure VI, if $a = b = c = 1$ and all OQ are para to the triphenyl methane carbon substituent, then at least one R^3 is not H; and
- 30 (c) at least one solvent.

13. A positive photosensitive resin composition according to claim 12,
wherein Ar¹ is a moiety selected from the group consisting of

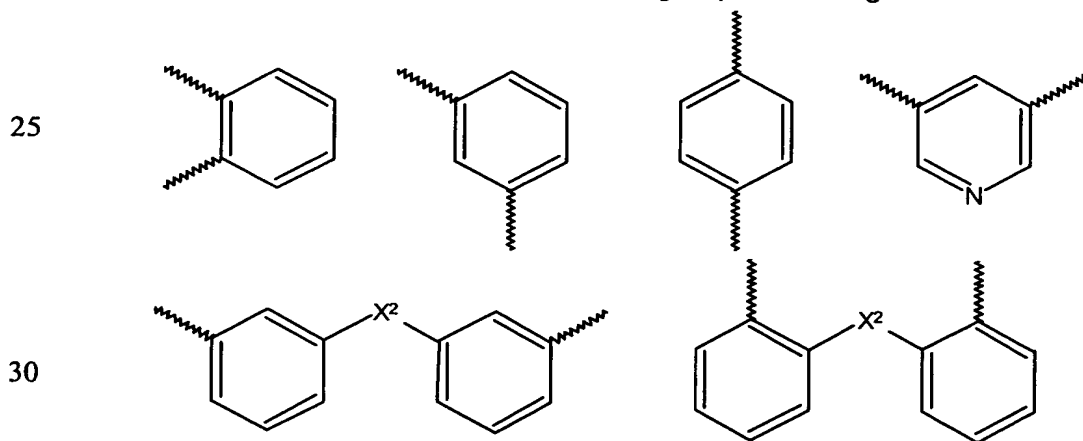


wherein X¹ is selected from the group consisting of -O-, -S-, -C(CF₃)₂-, -
10 CH₂-, -SO₂-, -NHCO- and -SiR⁹₂- and each R⁹ is independently selected
from the group consisting of a C₁ – C₇ linear or branched alkyl and a C₅
– C₈ cycloalkyl group.

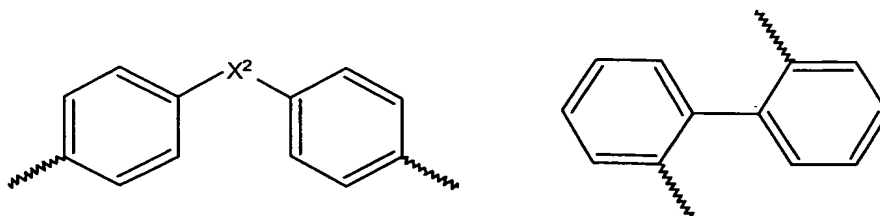
14. A positive photosensitive resin composition according to claim 12,
15 wherein Ar¹ is a moiety derived from a reactant selected from the group
consisting of 2,2-bis(3-amino-4-hydroxyphenyl)-hexafluoropropane, 3,3'-
dihydroxy-4,4'-diaminodiphenylether, 3,3'-dihydroxybenzidine, 4,6-
diaminoresorcinol, and 2,2-bis(3-amino-4-hydroxyphenyl)propane or
mixtures thereof.

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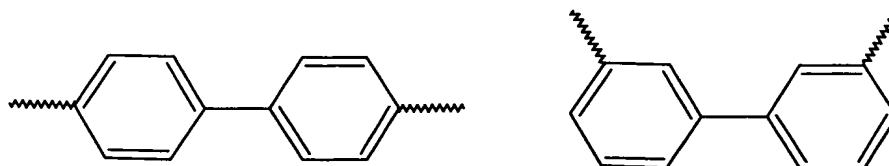
15. A positive photosensitive resin composition according to claim 12,
wherein Ar³ is a moiety selected from the group consisting of



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wherein X^2 is selected from the group consisting of -O-, -S-, $-C(CF_3)_2-$, -CH₂-, -SO₂- and -NHCO-.

15

16. A positive photosensitive resin composition according to claim 12, wherein Ar³ is a moiety derived from a reactant selected from the group consisting of 4,4'-diphenyletherdicarboxylic acid, terephthalic acid, isophthalic acid, isophthaloyl dichloride, phthaloyl dichloride, terephthaloyl dichloride, 4,4'-diphenyletherdicarboxylic acid dichloride, dimethylisophthalate, dimethylphthalate, dimethylterephthalate, diethylisophthalate, diethylphthalate, diethylterephthalate and mixtures thereof.

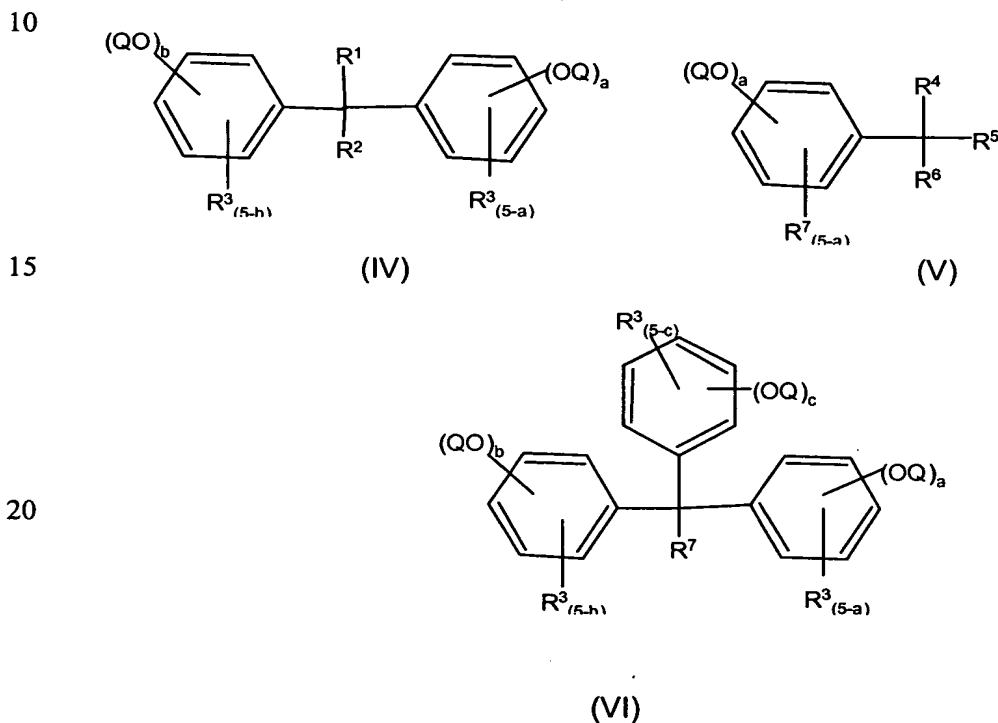
17. A positive photosensitive resin composition according to claim 12, wherein D is selected from the group consisting of the moiety IIb and the moiety IIc.

18. A positive photosensitive resin composition according to claim 12, wherein k^1 is from about 0.01 to about 0.1.

19. A positive photosensitive resin composition according to claim 12, wherein G is an organic group having a carbonyl group attached directly to the terminal NH of the polybenzoxazole precursor polymer.
- 5 20. A positive photosensitive resin composition according to claim 12, wherein G is alkyl carbonyl.
21. A positive photosensitive resin composition according to claim 12, wherein the at least one polybenzoxazole precursor polymer comprises
- 10 Structure I.
22. A positive photosensitive resin composition according to claim 12, wherein the at least one polybenzoxazole precursor polymer comprises
- 15 Structure III.
23. A positive photosensitive resin composition according to claim 12, wherein the at least one polybenzoxazole precursor polymer comprises a mixture of Structure I and Structure III.
- 20 24. A positive photosensitive resin composition according to claim 21, wherein the at least one non-polymeric photosensitive compound comprises a compound having within its structure a moiety selected from the group consisting of the moiety IIb and the moiety IIc.
- 25 25. A positive photosensitive resin composition according to claim 22, wherein the at least one non-polymeric photosensitive compound comprises a compound having within its structure a moiety selected from the group consisting of the moiety IIb and the moiety IIc.
- 30 26. A positive photosensitive resin composition according to claim 23, wherein the at least one non-polymeric photosensitive compound

comprises a compound having within its structure a moiety selected from the group consisting of the moiety IIb and the moiety II d.

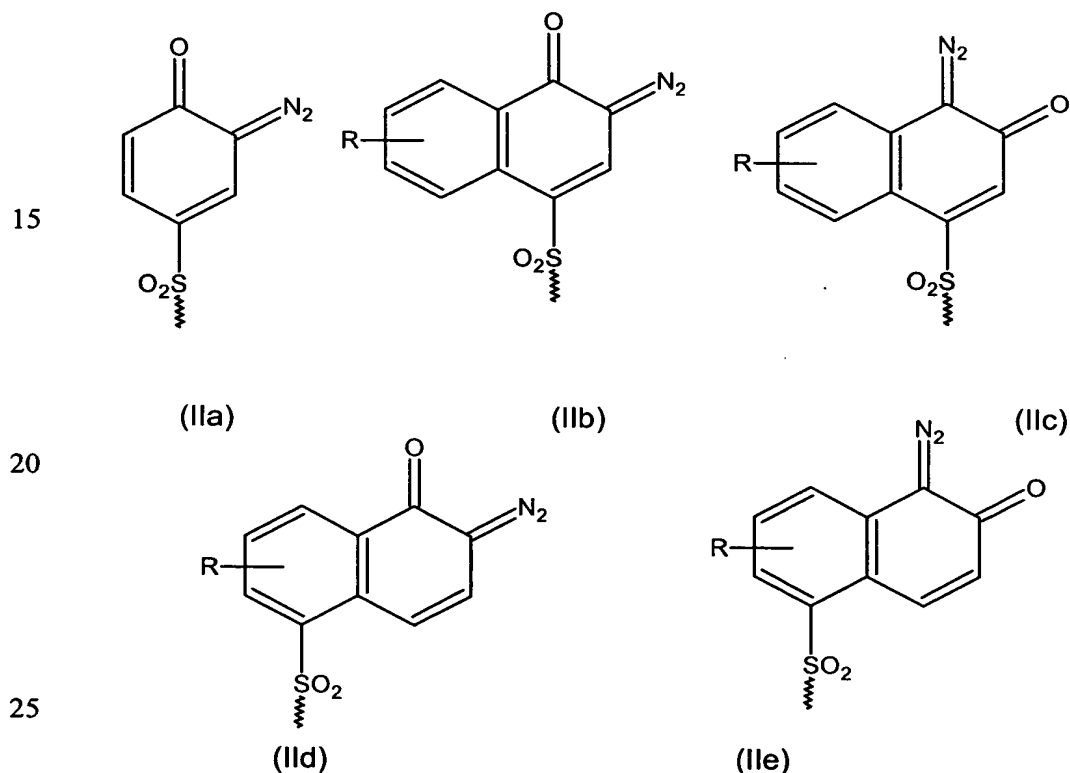
27. A positive photosensitive resin composition according to claim 21,
 5 wherein the at least one non-polymeric photosensitive compound comprises a compound having within its structure a moiety selected from the group consisting of the moiety IIb and or the moiety II d and is selected from the group consisting of compounds described by structures IV – VI,



25 wherein R¹, R², R⁴, R⁵, R⁶ and R⁷ each independently are selected from the group consisting of a linear or branched C₁ - C₄ alkyl group, a phenyl or halide substituted C₁ - C₄ linear or branched alkyl group, a perfluorinated C₁ - C₄ linear or branched alkyl group, a C₅ - C₇ cycloalkyl group, a C₁ - C₄ alkyl or halide substituted C₅ - C₇ cycloalkyl group or
 30 alternatively R¹ and R² or any two of R⁴, R⁵, and R⁶ may together form a 5-7 membered ring; each R³ is independently selected from the group

consisting of H, a linear or branched C₁ - C₄ alkyl group, a phenyl or
halide substituted C₁ - C₄ linear or branched alkyl group, a perfluorinated
linear or branched C₁ - C₄ alkyl group, a C₅ - C₇ cycloalkyl group, a C₁ -
C₄ alkyl or halide substituted C₅ - C₇ cycloalkyl group, an unsubstituted
5 phenyl group, and a phenyl or alkyl or halide substituted phenyl group; Q
is selected from the group consisting of H or D with the proviso that at
least one Q = D; D is selected from the group consisting of one of the
following moieties IIa-IIe:

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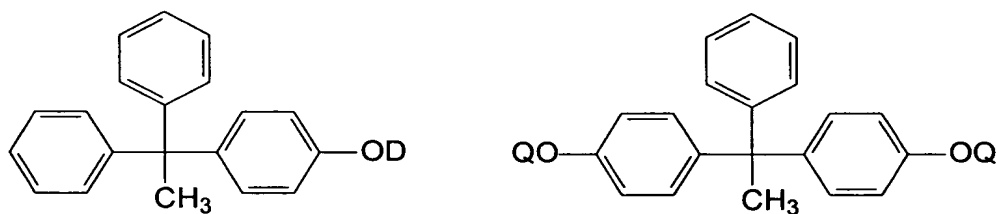
wherein, R is selected from the group consisting of H, a C₁ - C₄ alkyl
group, a C₁ - C₄ alkoxy group and a cyclohexyl group; a is an integer
30 from 1 to 5; b and c are integers from 0 to 5 with the provisos: (1) that for
Structure IV, if a = b = 1 and both OQ are substituted para to the R¹R²C

substituent, then both R^1 and R^2 are not simultaneously methyl and (2) $1 \leq a+b < 6$; and the proviso that for Structure VI, if $a = b = c = 1$ and all OQ are para to the triphenyl methane carbon substituent, then at least one R^3 is not H.

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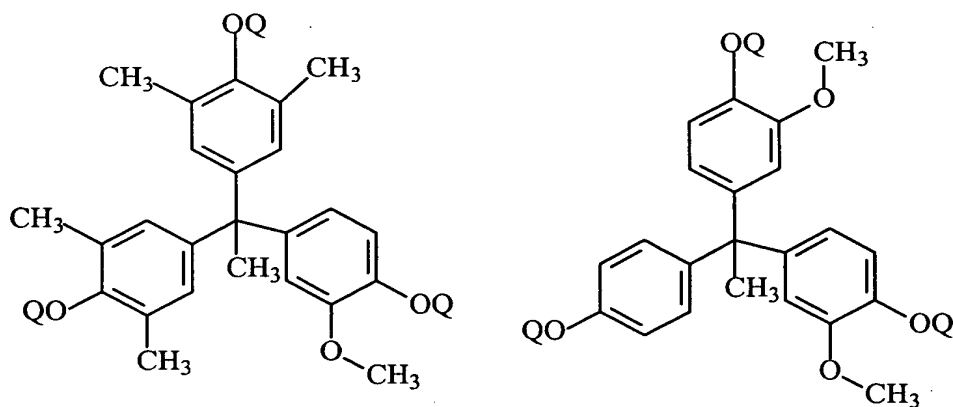
28. A positive photosensitive resin composition according to claim 21, wherein the non-polymeric photosensitive compound is selected from the group consisting of

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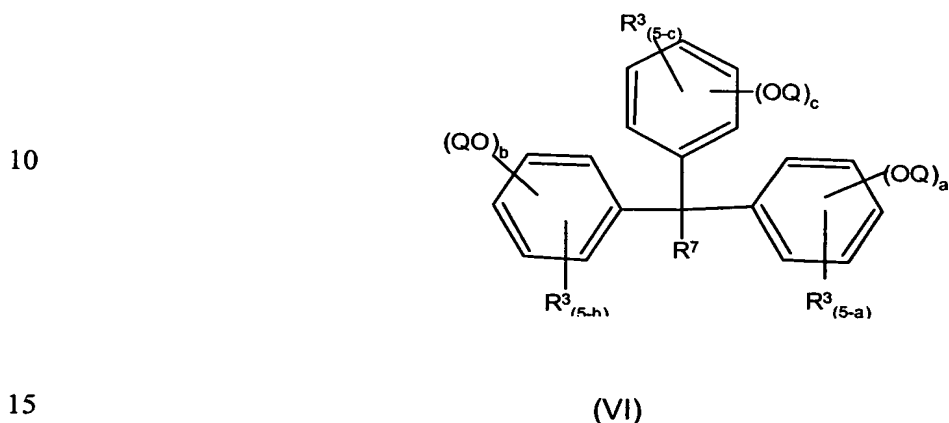
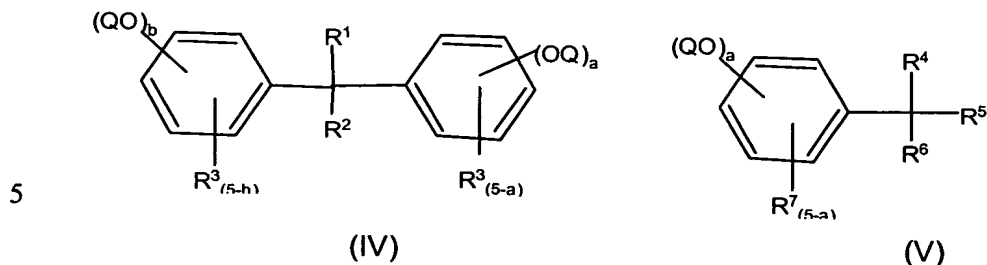
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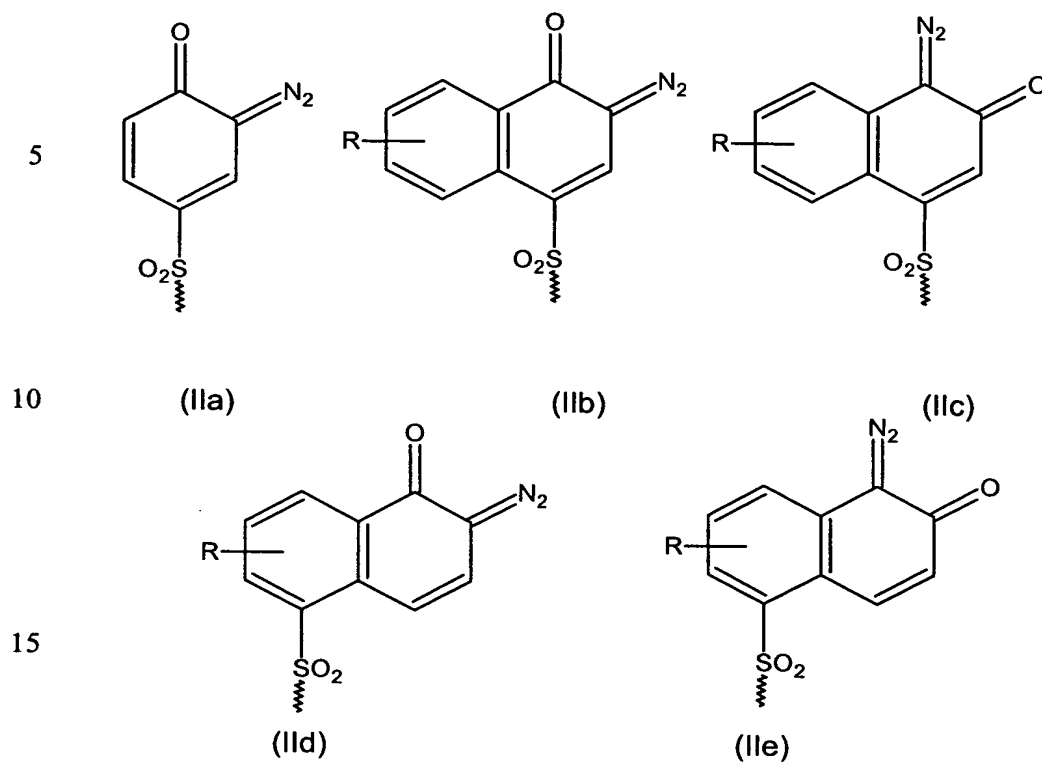
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29. A positive photosensitive resin composition according to claim 23, wherein the at least one non-polymeric photosensitive compound comprises a compound having within its structure a moiety selected from the group consisting of the moiety IIb and the moiety IId and is selected from the group consisting of compounds described by structures IV – VI,

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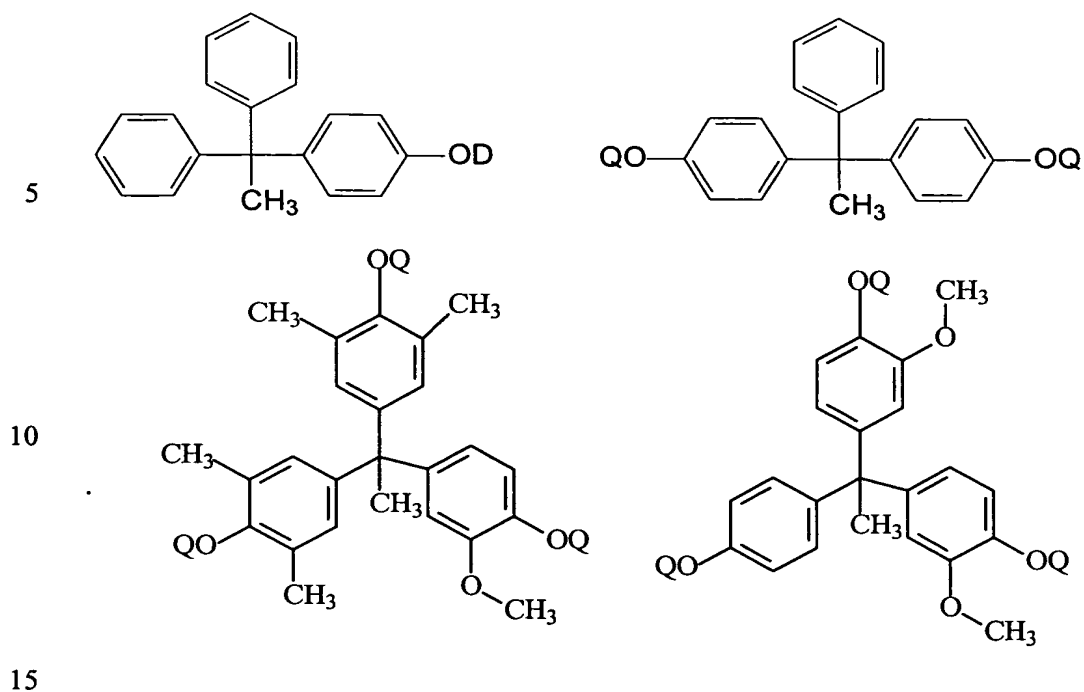


15 wherein R^1 , R^2 , R^4 , R^5 , R^6 and R^7 each independently are selected from the group consisting of a linear or branched $C_1 - C_4$ alkyl group, a phenyl or halide substituted $C_1 - C_4$ linear or branched alkyl group, a perfluorinated $C_1 - C_4$ linear or branched alkyl group, a $C_5 - C_7$ cycloalkyl group, a $C_1 - C_4$ alkyl or halide substituted $C_5 - C_7$ cycloalkyl group, or
 20 alternatively R^1 and R^2 or any two of R^4 , R^5 , and R^6 may together form a 5-7 membered ring; each R^3 is independently selected from the group consisting of H, a linear or branched $C_1 - C_4$ alkyl group, a phenyl or halide substituted $C_1 - C_4$ linear or branched alkyl group, a perfluorinated
 25 linear or branched $C_1 - C_4$ alkyl group, a $C_5 - C_7$ cycloalkyl group, a $C_1 - C_4$ alkyl or halide substituted $C_5 - C_7$ cycloalkyl group, an unsubstituted phenyl group and a phenyl or alkyl or halide substituted phenyl group; Q is selected from the group consisting of H or D with the proviso that at least one $Q = D$; D is selected from the group consisting of one of the
 30 following moieties IIa-IIe:

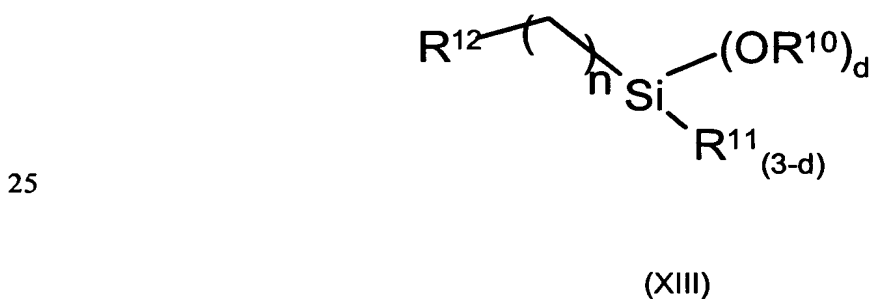


wherein, R is selected from the group consisting of H, a C₁ – C₄ alkyl group, a C₁ – C₄ alkoxy group and a cyclohexyl group; a is an integer from 1 to 5; b and c are integers from 0 to 5 with the provisos: (1) that for Structure IV, if a = b = 1 and both OQ are substituted para to the R¹R²C substituent, then both R¹ and R² are not simultaneously methyl and (2) 1 ≤ a+b < 6; and the proviso that for Structure VI, if a = b = c = 1 and all OQ are para to the triphenyl methane carbon substituent, then at least one R³ is not H.

30. A positive photosensitive resin composition according to claim 23, wherein the non-polymeric photosensitive compound is selected from the group consisting of

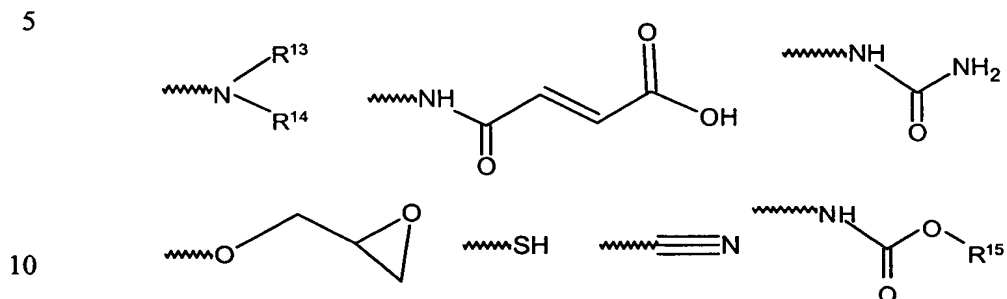


31. A positive photosensitive resin composition according to claim 12, further comprising an adhesion promoter.
32. A positive photosensitive resin composition according to claim 31
- 20 wherein the adhesion promoter has the Structure XIII



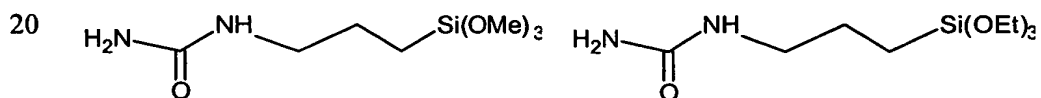
- wherein each R^{10} is independently selected from the group consisting of
- 30 a $C_1 - C_4$ alkyl group and a $C_5 - C_7$ cycloalkyl group and each R^{11} is independently selected from the group consisting of a $C_1 - C_4$ alkyl

group, a C₁ – C₄ alkoxy group, a C₅ – C₇ cycloalkyl group and a C₅ – C₇ cycloalkoxy group; d is an integer from 0 to 3 and n is an integer from 1 to about 6 and R¹² is a moiety selected from the group consisting of one of the following moieties:



wherein each R¹³ and R¹⁴ are independently selected from the group consisting of a C₁ – C₄ alkyl group and a C₅ – C₇ cycloalkyl group, and R¹⁵ is selected from the group consisting of a C₁ – C₄ alkyl group and a C₅ – C₇ cycloalkyl group.

33. A positive photosensitive resin composition according to claim 31 wherein the adhesion promoter is selected from the group consisting of

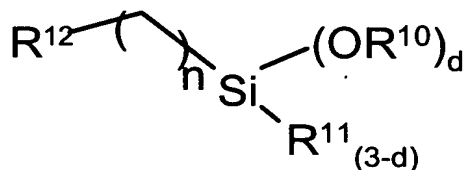


25 34. A positive photosensitive resin composition according to claim 24 wherein D on the polybenzoxazole precursor polymer is a moiety selected from the group consisting of moiety IIb and moiety IId.

30 35. A positive photosensitive resin composition according to claim 24 wherein D on the polybenzoxazole precursor polymer is a moiety selected from the group consisting of moiety IIb and moiety IId, G is an

organic group having a carbonyl group attached directly to the terminal NH of the polybenzoxazole precursor polymer, and the composition further comprises an adhesion promoter having the structure

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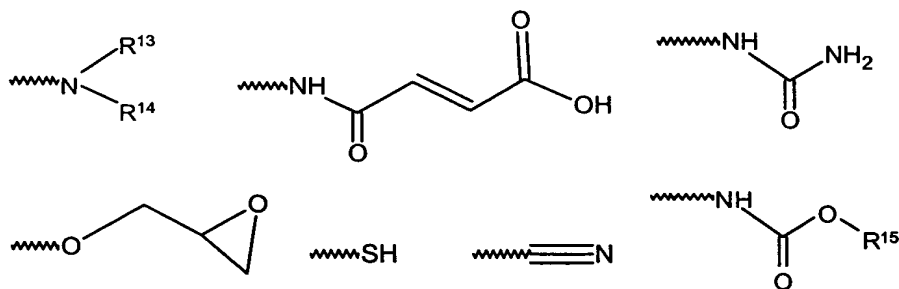


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(XIII)

wherein each R^{10} is independently selected from the group consisting of a $C_1 - C_4$ alkyl group and a $C_5 - C_7$ cycloalkyl group and each R^{11} is independently selected from the group consisting of a $C_1 - C_4$ alkyl group, a $C_1 - C_4$ alkoxy group, a $C_5 - C_7$ cycloalkyl group and a $C_5 - C_7$ cycloalkoxy group; d is an integer from 0 to 3 and n is an integer from 1 to about 6 and R^{12} is selected from the group consisting of one of the following moieties:

20

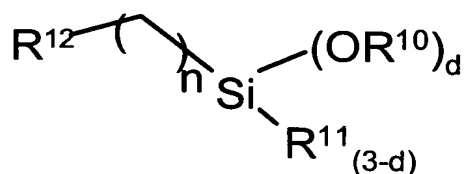


25

wherein each R^{13} and R^{14} are independently selected from the group consisting of a $C_1 - C_4$ alkyl group or a $C_5 - C_7$ cycloalkyl group, and R^{15} is a $C_1 - C_4$ alkyl group and a $C_5 - C_7$ cycloalkyl group.

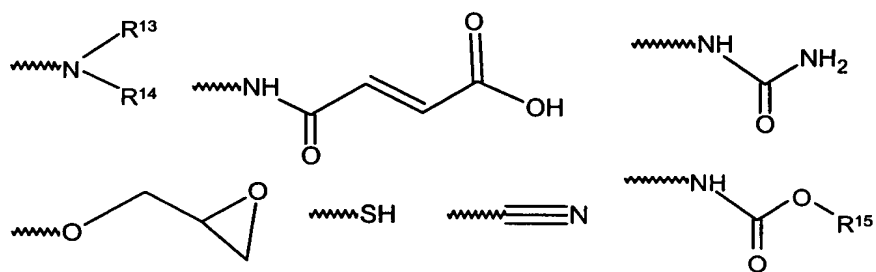
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36. A positive photosensitive resin composition according to claim 25 wherein G is an organic group having a carbonyl group attached directly to the terminal NH of the polybenzoxazole precursor polymer, and the composition further comprises an adhesion promoter having the structure



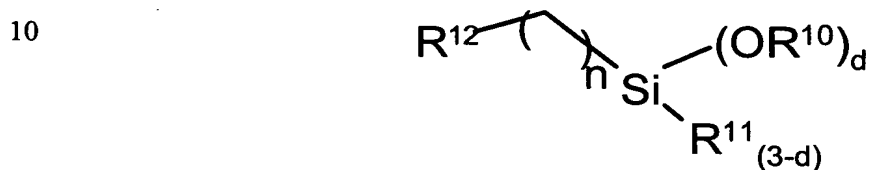
(XIII)

wherein each R^{10} is independently selected from the group consisting of a $\text{C}_1 - \text{C}_4$ alkyl group and a $\text{C}_5 - \text{C}_7$ cycloalkyl group and each R^{11} is independently selected from the group consisting of a $\text{C}_1 - \text{C}_4$ alkyl group, a $\text{C}_1 - \text{C}_4$ alkoxy group, a $\text{C}_5 - \text{C}_7$ cycloalkyl group and a $\text{C}_5 - \text{C}_7$ cycloalkoxy group; d is an integer from 0 to 3 and n is an integer from 1 to about 6 and R^{12} is a moiety selected from the group consisting of one of the following moieties:



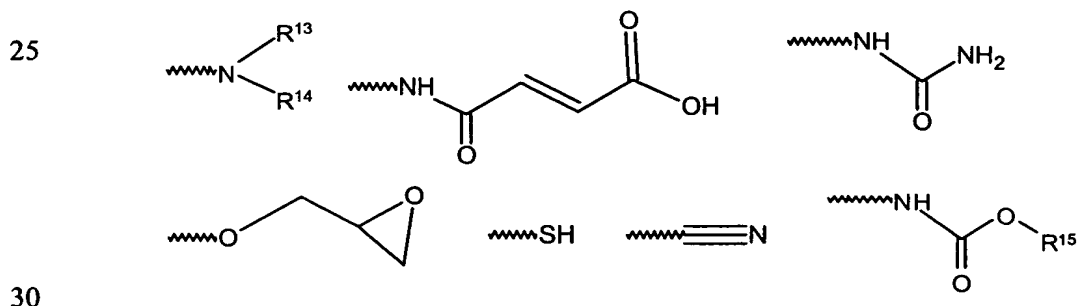
wherein each R^{13} and R^{14} are independently selected from the group consisting of a $\text{C}_1 - \text{C}_4$ alkyl group and a $\text{C}_5 - \text{C}_7$ cycloalkyl group, and R^{15} is selected from the group consisting of a $\text{C}_1 - \text{C}_4$ alkyl group and a $\text{C}_5 - \text{C}_7$ cycloalkyl group.

37. A positive photosensitive resin composition according to claim 26 wherein D on the polybenzoxazole precursor polymer is a moiety selected from the group consisting of moiety IIb and moiety IIc, G is an organic group having a carbonyl group attached directly to the terminal NH of the polybenzoxazole precursor polymer, and the composition further comprises an adhesion promoter having the structure



(XIII)

wherein each R^{10} is independently selected from the group consisting of a $\text{C}_1 - \text{C}_4$ alkyl group and a $\text{C}_5 - \text{C}_7$ cycloalkyl group and each R^{11} is independently selected from the group consisting of a $\text{C}_1 - \text{C}_4$ alkyl group, a $\text{C}_1 - \text{C}_4$ alkoxy group, a $\text{C}_5 - \text{C}_7$ cycloalkyl group and a $\text{C}_5 - \text{C}_7$ cycloalkoxy group; d is an integer from 0 to 3 and n is an integer from 1 to about 6 and R^{12} is a moiety selected from the group consisting of one of the following moieties:



wherein each R¹³ and R¹⁴ are independently selected from the group consisting of a C₁ – C₄ alkyl group and a C₅ – C₇ cycloalkyl group, and R¹⁵ is selected from the group consisting of a C₁ – C₄ alkyl group and a C₅ – C₇ cycloalkyl group.

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38. A process for forming a patterned image on a substrate, the process comprises the steps of:

- 10 (a) coating on a suitable substrate, a positive-working photosensitive composition of claim 12 thereby forming a coated substrate;
- (b) prebaking the coated substrate;
- (c) exposing the prebaked coated substrate to actinic radiation;
- (d) developing the exposed coated substrate with an aqueous developer, thereby forming an uncured relief image on the coated
15 substrate; and
- (e) baking the developed coated substrate at an elevated temperature, thereby curing the relief image.

20 39. A process for forming a patterned image on a substrate, the process comprises the steps of:

- (a) coating on a suitable substrate, a positive-working photosensitive composition of claim 17 thereby forming a coated substrate;
- (b) prebaking the coated substrate;
- (c) exposing the prebaked coated substrate to actinic radiation;
- 25 (d) developing the exposed coated substrate with an aqueous developer, thereby forming an uncured relief image on the coated substrate; and
- (e) baking the developed coated substrate at an elevated temperature, thereby curing the relief image.

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40. A process for forming a patterned image on a substrate, the process comprises the steps of:
- (a) coating on a suitable substrate, a positive-working photosensitive composition of claim 25 thereby forming a coated substrate;
 - 5 (b) prebaking the coated substrate;
 - (c) exposing the prebaked coated substrate to actinic radiation;
 - (d) developing the exposed coated substrate with an aqueous developer, thereby forming an uncured relief image on the coated substrate; and
 - 10 (e) baking the developed coated substrate at an elevated temperature, thereby curing the relief image.
41. A process for forming a patterned image on a substrate, the process comprises the steps of:
- 15 (a) coating on a suitable substrate, a positive-working photosensitive composition of claim 27 thereby forming a coated substrate;
 - (b) prebaking the coated substrate;
 - (c) exposing the prebaked coated substrate to actinic radiation;
 - (d) developing the exposed coated substrate with an aqueous
20 developer, thereby forming an uncured relief image on the coated substrate; and
 - (e) baking the developed coated substrate at an elevated temperature, thereby curing the relief image.
- 25 42. A process for forming a patterned image on a substrate, the process comprises the steps of:
- (a) coating on a suitable substrate, a positive-working photosensitive composition of claim 28 thereby forming a coated substrate;
 - (b) prebaking the coated substrate;
 - 30 (c) exposing the prebaked coated substrate to actinic radiation;

- (d) developing the exposed coated substrate with an aqueous developer, thereby forming an uncured relief image on the coated substrate; and
- (e) baking the developed coated substrate at an elevated temperature, thereby curing the relief image.

43. A process for forming a patterned image on a substrate, the process comprises the steps of:

- (a) coating on a suitable substrate, a positive-working photosensitive composition of claim 29 thereby forming a coated substrate;
- (b) prebaking the coated substrate;
- (c) exposing the prebaked coated substrate to actinic radiation;
- (d) developing the exposed coated substrate with an aqueous developer, thereby forming an uncured relief image on the coated substrate; and
- (d) baking the developed coated substrate at an elevated temperature, thereby curing the relief image.

44. A process for forming a patterned image on a substrate, the process comprises the steps of:

- (a) coating on a suitable substrate, a positive-working photosensitive composition of claim 31 thereby forming a coated substrate;
- (b) prebaking the coated substrate;
- (c) exposing the prebaked coated substrate to actinic radiation;
- (d) developing the exposed coated substrate with an aqueous developer, thereby forming an uncured relief image on the coated substrate; and
- (e) baking the developed coated substrate at an elevated temperature, thereby curing the relief image.

45. A process for forming a patterned image on a substrate, the process comprises the steps of:
- (a) coating on a suitable substrate, a positive-working photosensitive composition of claim 32 thereby forming a coated substrate;
 - 5 (b) prebaking the coated substrate;
 - (c) exposing the prebaked coated substrate to actinic radiation;
 - (d) developing the exposed coated substrate with an aqueous developer, thereby forming an uncured relief image on the coated substrate; and
 - 10 (e) baking the developed coated substrate at an elevated temperature, thereby curing the relief image.
46. A process for forming a patterned image on a substrate, the process comprises the steps of:
- 15 (a) coating on a suitable substrate, a positive-working photosensitive composition of claim 33 thereby forming a coated substrate;
 - (b) prebaking the coated substrate;
 - (c) exposing the prebaked coated substrate to actinic radiation;
 - (d) developing the exposed coated substrate with an aqueous developer, thereby forming an uncured relief image on the coated substrate; and
 - 20 (e) baking the developed coated substrate at an elevated temperature, thereby curing the relief image.
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47. A process for forming a patterned image on a substrate, the process comprises the steps of:
- (a) coating on a suitable substrate, a positive-working photosensitive composition of claim 36 thereby forming a coated substrate;
 - 30 (b) prebaking the coated substrate;
 - (c) exposing the prebaked coated substrate to actinic radiation;

- (d) developing the exposed coated substrate with an aqueous developer, thereby forming an uncured relief image on the coated substrate; and
- (e) baking the developed coated substrate at an elevated temperature, thereby curing the relief image.

48. A process for forming a patterned image on a substrate, the process comprises the steps of:

- (a) coating on a suitable substrate, a positive-working photosensitive composition of claim 38 thereby forming a coated substrate;
- (b) prebaking the coated substrate;
- (c) exposing the prebaked coated substrate to actinic radiation;
- (d) developing the exposed coated substrate with an aqueous developer, thereby forming an uncured relief image on the coated substrate; and
- (e) baking the developed coated substrate at an elevated temperature, thereby curing the relief image.

49. A substrate having a patterned image produced by the process of claim 38.

50. A substrate having a patterned image produced by the process of claim 39.

51. A substrate having a patterned image produced by the process of claim 40.

52. A substrate having a patterned image produced by the process of claim 41.

53. A substrate having a patterned image produced by the process of claim 42.
- 5 54. A substrate having a patterned image produced by the process of claim 43.
55. A substrate having a patterned image produced by the process of claim 44.
- 10 56. A substrate having a patterned image produced by the process of claim 45.
57. A substrate having a patterned image produced by the process of claim 46.
- 15 58. A substrate having a patterned image produced by the process of claim 47.
- 20 59. A substrate having a patterned image produced by the process of claim 48